

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3538
NORFOLK AND WESTERN RAILWAY COMPANY
IN RE ACCIDENT
NEAR WALLACE, VA., ON
OCTOBER 30, 1953

SUMMARY

Date: October 30, 1953

Railroad: Norfolk and Western

Location: Wallace, Va.

Kind of accident: Rear-end collision

Trains involved: Freight : Passenger

Train numbers: 71 : 45

Engine numbers: 105 : 613

Consists: 35 cars, caboose : 13 cars

Estimated speeds: Standing : 20 m. p. h.

Operation: Signal indications

Track: Single; tangent; 1.20 percent
descending grade westward

Weather: Clear

Time: 5:13 p. m.

Casualties: 56 injured

Cause: Failure to operate the following train
in accordance with signal indications

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3538

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910..

THE NORFOLK AND WESTERN RAILWAY COMPANY

November 24, 1953

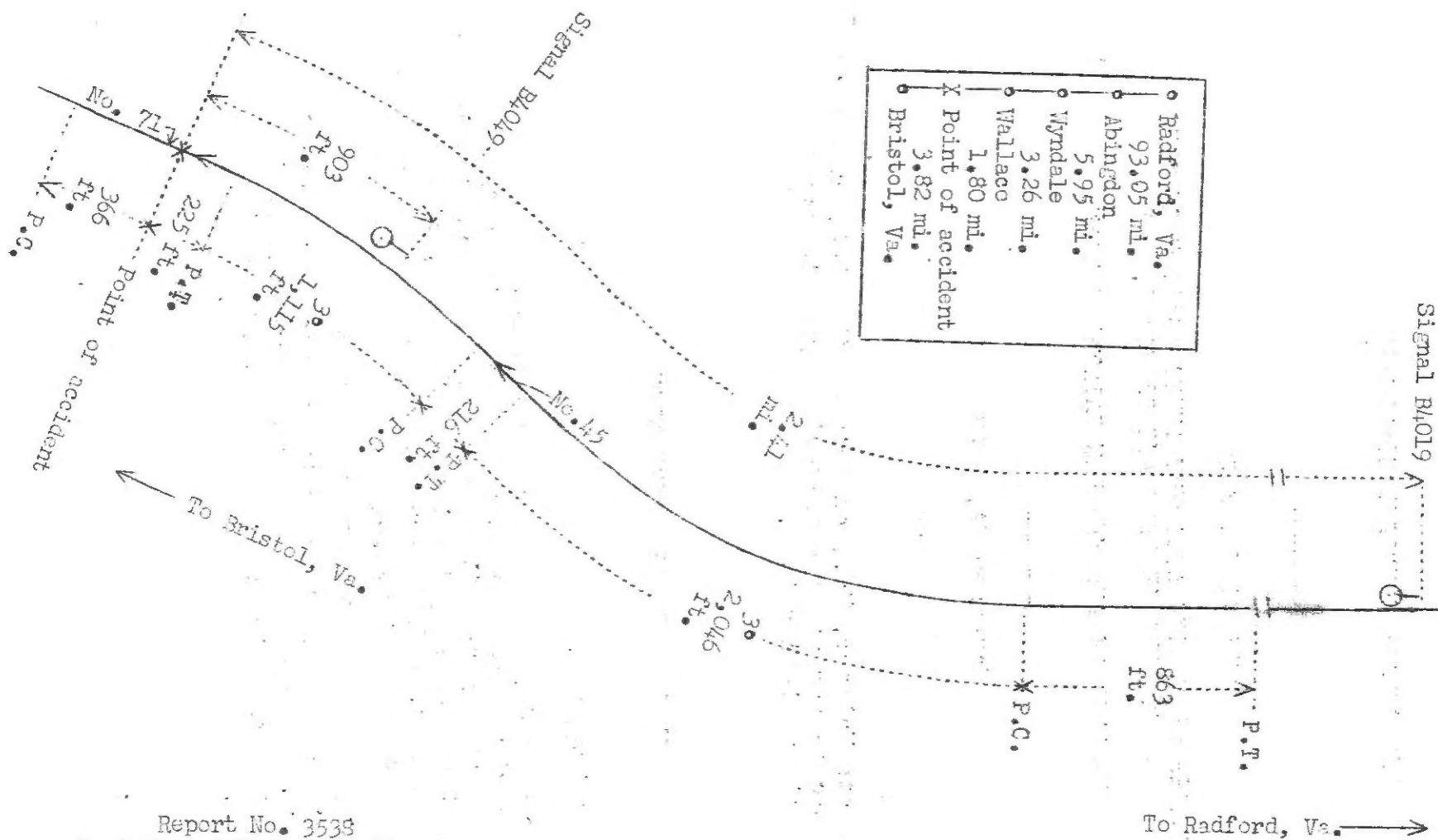
Accident near Wallace, Va., on October 30, 1953, caused by
failure to operate the following train in accordance
with signal indications.

REPORT OF THE COMMISSION¹

CLARKE, Commissioner:

On October 30, 1953, there was a rear-end collision between a freight train and a passenger train on the Norfolk and Western Railway near Wallace, Va., which resulted in the injury of 43 passengers, 1 railway mail clerk, 1 baggageman-express messenger, 7 dining-car employees, 1 train porter, and 3 train-service employees.

¹ Under authority of section 17 (2) of the Interstate Commerce Act, the above-entitled proceeding was referred by the Commission to Commissioner Clarke for consideration and disposition.



Report No. 3538
 Norfolk and Western Railway
 Wallace, Va.
 October 30, 1953

Location of Accident and Method of Operation

This accident occurred on that part of the Radford Division extending between Radford and Bristol, Va., 107.88 miles, a single-track line, over which trains are operated by signal indications. The accident occurred on the main track at a point 104.06 miles west of Radford and 1.80 miles west of Wallace. From the east there are, in succession, a tangent 863 feet in length, a 3° curve to the right 2,046 feet, a tangent 216 feet, a 3° curve to the left 1,115 feet, and a tangent 225 feet to the point of accident and 366 feet westward. The grade for west-bound trains is 1.20 percent descending throughout a distance of 1,860 feet immediately east of the point of accident.

Automatic signals B4019 and B4049, governing west-bound movements, are located, respectively, 2.41 miles and 903 feet east of the point of accident. These signals form part of a traffic-control system, which extends between Radford and Bristol. Both signals are of the position-light type, and both are continuously lighted. Aspects applicable to this investigation and the corresponding indications and names are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
B4019	Three amber lights in vertical position	Proceed at prescribed speed	Clear
B4019	Three amber lights in diagonal position to the right	Proceed preparing to stop at next signal. Train exceeding medium speed must at once reduce to that speed	Approach
B4049	Three amber lights in horizontal position	Stop; then proceed at low(restricted) speed	Stop and Proceed

All line and track circuits are alternating current, with polarized line circuits for the approach and clear indications. The controlling circuits are so arranged that when the block of signal B4019 is clear and the block of signal B4049 is occupied by a west-bound train, signal B4019 indicates Approach and signal B4049 indicates Stop and Proceed.

This carrier's operating rules read in part as follows:

DEFINITIONS

Low (Restricted) Speed--A speed that will permit stopping short of another train or an obstruction, but not exceeding 15 miles per hour.

Medium Speed--One-half the maximum authorized speed, but not to exceed 30 miles per hour.

15. * * * In automatic block signal territory the explosion of two torpedoes is a signal for enginemen and trainmen to look out for flagman or other signal. The explosion of one torpedo will indicate the same as two, but the use of two is required.

* * *

29. When a signal, except a fixed signal, is given to stop a train, it must, unless otherwise provided, be acknowledged * * *

34. All members of engine and train crews must, when practicable, communicate to each other by its name the indication of each signal affecting the movement of their train or engine.

35. The following signals will be used by flagmen:

Day signals--A red flag,
Torpedoes and
Fusees.

* * *

99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes and, when necessary, in addition displaying lighted fusees. When recalled and safety to the train will permit, he may return.

* * *

261. On portions of the railroad, and on designated tracks so specified in the time-table, trains will be governed by block signals whose indications will supersede the superiority of trains for both opposing and following movements on the same track.

Rule 261 is in effect between Radford and Bristol.

The maximum authorized speed for passenger trains is 65 miles per hour, but it is restricted to 55 miles per hour in the vicinity of the point of accident.

Description of Accident

No. 71, a west-bound fourth-class freight train, consisted of engine 105, 35 cars, and a caboose. This train passed the west switch at Wyndale, 4.79 miles east of the point of accident and the last point at which time is recorded on the traingraph of the traffic-control machine, at 4:51 p. m., 3 hours 36 minutes late, and stopped between 5 p. m. and 5:05 p. m., with the rear of the train 1.80 miles west of Wallace and 903 feet west of signal B4049. About 10 minutes later the rear end was struck by No. 45.

No. 45, a west-bound first-class passenger train, consisted of engine 613, two mail cars, two box express cars, one combination baggage-coach, three coaches, one tavern car, one dining car, two sleeping cars, and one coach, in the order named. This train passed the west switch at Wyndale at 5:08 p. m., 1 minute late, passed signal B4019, which should have indicated Approach, passed the flagman of No. 71, passed signal B4049, which indicated Stop and Proceed, and while moving at an estimated speed of 20 miles per hour it struck the rear end of No. 71.

The twenty-seventh, twenty-eighth, thirtieth, thirty-first, and thirty-fifth cars and the caboose of No. 71 were derailed. With the exception of the caboose, all of the derailed cars remained upright and approximately in line with the track. The twenty-fifth car, the twenty-seventh to the thirty-first cars, inclusive, the thirty-fourth car, the thirty-fifth car, and the caboose were badly damaged. A coal stove in the caboose overturned, and the caboose and the thirty-fifth car were consumed by fire. The engine and the rear wheels of the front truck of the fifth car of No. 45 were derailed. The engine remained upright and in line with the track. The front end of the engine was badly damaged, and the first, third, fourth, and fifth cars were slightly damaged.

The engineer, the fireman, and the front brakeman of No. 45 were injured.

The weather was clear at the time of the accident, which occurred about 5:13 p. m.

Discussion

The crew of No. 71 performed switching service at Abingdon, 11.01 miles east of the point at which the accident occurred. Before the train departed from that station the conductor informed the train dispatcher that one car was to be added to the train at an auxiliary track located 1,892 feet west of signal B4049. During the conversation the train dispatcher informed the conductor that No. 45 would be on time. No. 71 departed from Abingdon at 4:39 p. m., and stopped with the engine in the vicinity of the auxiliary-track switch. After the train stopped, the engine entered the auxiliary track, the front brakeman and the swing brakeman accompanied the engine, the conductor proceeded westward a short distance and then returned to the caboose, and the flagman proceeded eastward to provide flag protection. When the engine was detached, the brakes of the train became applied in emergency. The conductor said that as he entered the caboose he observed the flagman proceeding eastward. At that time the flagman was in the vicinity of signal B4049. The flagman said that after he passed signal B4049 he observed that the signal indicated Stop and Proceed. He said that he proceeded to a point about 660 feet east of the signal and placed two torpedoes on the rail. He then returned to a point about 135 feet west of the torpedoes. Soon afterward he heard the engineer of No. 45 sound a grade-crossing whistle signal as that train approached a rail-highway grade crossing near Wallace. When he heard No. 45 approaching he realized that the train would not stop short of signal B4049. He ran eastward, and when the front of the train became visible to him, at a distance which he thought was 320 to 400 feet, he gave stop signals with a red flag. He said that his signals were not acknowledged, and he continued to give stop signals from the north side of the track until the front of the train passed him. He thought the train was moving at a speed of about 35 miles per hour. He could not remember afterward whether he heard the explosion of the torpedoes or whether the brakes of No. 45 were applied as the train passed. None of the other members of the crew of No. 71 heard the explosion of the torpedoes. However, parts of an exploded torpedo were found at the approximate location where the flagman said he placed torpedoes. The conductor observed No. 45 approaching and alighted from the caboose immediately before the collision occurred. He thought that No. 45 was moving at a speed of about 30 miles per hour.

As No. 45 was approaching the point where the accident occurred the speed was about 60 miles per hour. The engine-men were maintaining a lookout ahead from their positions in the cab of the engine, and the members of the train crew were in various locations in the cars of the train. The brakes of the train had been tested and had functioned properly when used en route. The enginemen said that as the train approached signal B4019 they were looking almost directly toward the sun, and the engineer said that it was necessary for him to shield his eyes from the sun in order to distinguish the aspect of the signal. However, both enginemen were certain that the signal indicated Proceed, and each of them called the indication. As the train approached signal B4049 the engineer made a service application of the brakes and the speed was reduced to about 45 miles per hour. Because of curvature of the track and a hillside north of the track, signal B4049 first becomes visible from the engineer's position on an engine at a distance of 1,092 feet and from the fireman's position on an engine at a distance of 865 feet. The engineer said that when the train reached a point several hundred feet east of signal B4049 he observed that the signal indicated Stop and Proceed. He immediately made an emergency application of the brakes and opened the sander valve. At this time the throttle was closed and the service application of the brakes had not been released. The fireman said that he saw the signal at approximately the time that the engineer called the indication. At the same time, he saw the caboose of No. 45 and the flagman of that train giving stop signals. Neither the engineer nor the fireman heard the explosion of a torpedo. The engineer did not see the flagman at any time before the collision occurred. He thought that the speed had been reduced to about 5 miles per hour when the collision occurred.

Members of the signal force of the carrier arrived at the scene of the accident about 5 hours after the accident occurred. At that time the rear cars of No. 45 had been removed from the block of signal B4019 and derailed equipment remained in the block of signal B4049. Signal B4019 was found to indicate Approach and signal B4049 was found to indicate Stop and Proceed, the proper indications. Inspections and tests of the signal apparatus in the vicinity of the point of accident disclosed no condition which would have caused an improper operation of the signal system. The train dispatcher said that he noticed nothing unusual in the operation of the traffic-control machine prior to the time the accident occurred.

Signal B4019 should have indicated Approach for the movement of No. 45, and it indicated Approach after the rear cars of No. 45 were removed. No. 71 passed this signal, which indicated Proceed, at a speed of about 35 miles per hour a short time before the accident occurred, and the enginemen said that because they were looking almost directly toward the sun the aspect of the signal was difficult to distinguish. The same condition at signal B4019 existed when No. 45 was approaching it.

Cause

This accident was caused by failure to operate the following train in accordance with signal indications.

Dated at Washington, D. C., this twenty-fourth day of November, 1953.

By the Commission, Commissioner Clarke.

(SEAL)

GEORGE W. LAIRD,
Secretary.